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Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L31

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Search History

DATE: Monday, August 25, 2003 Printable Copy Create Case

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DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

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L19	L7 and ((dielectric$6 or di-electric$6) with (measure$8 or determin$8 or amount or acquir$4))	163	L19
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L6	L5 and (temperature or heat$4 or thermal$3 or Kelvin or celcius or fareignheight farenheight or fairenheight or fareinheight)	2583	L6

L5	L4 and (brine or saline or salinity or salt)	2611	L5
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L3	L2 and (dielectric$6 or di-electric$6)	4976	L3
L2	L1 and (fraction$5 or portion$3 or part$5)	127299	L2
L1	((magnetic adj resonance) or MRI or NMR)	154507	L1

END OF SEARCH HISTORY

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L5: Entry 1 of 3 File: PGPB Jan 9, 2003

DOCUMENT-IDENTIFIER: US 20030006768 A1
TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface earth formations

Continuity Related Application Number (3):
6346813

Continuity Data (3):
parent-patent 6346813 US

Summary of Invention Paragraph (21):
[0020] Nuclear magnetic resonance (NMR) can be used to monitor contamination and analyze fluid samples in fluid sampling tools under downhole conditions. Measurements are performed in the flow line itself. The methods are inherently noninvasive and noncontacting. Since magnetic resonance measurements are volumetric averages, they are insensitive to flow regime, bubble size, and identity of the continuous phase. Nuclear magnetic resonance of hydrogen nuclei (protons) is preferred because of the ubiquity and good NMR characteristics of this nuclear species. However, magnetic resonance of other nuclear species is useful and so included within the scope of the present invention.

Detail Description Paragraph (9):
[0037] An array of permanent magnets 25 is placed outside the thick-wall metal tube. These create a constant magnetic field, conventionally called B.sub.0, substantially perpendicular to the B.sub.1 field generated by the antenna. To make chemical shift measurements (see below) B.sub.0 is preferably substantially uniform in the volume occupied by fluid. However, to measure relaxation time, diffusion coefficient, or spin density of hydrogen or other elements, B.sub.0 need not be particularly uniform. One suitable arrangement of permanent magnets is described by Halbach [K. Halbach, Nuc. Inst. Methods 169, 1-10 (1980); K. Halbach, Nuc. Inst. Methods 187, 109-117 (1981)].

Detail Description Paragraph (19):
[0044] All standard NMR measurements can be made using the apparatus described. These include measurements of spin density (proportional to NMR signal amplitude), longitudinal and transverse relaxation times T.sub.1 and T.sub.2 and, more generally, their distributions [R. L. Kleinberg, "Well Logging", Encyclopedia of Nuclear Magnetic Resonance, volume 8 pg 4960-4969, John Wiley & Sons, 1996]; diffusion coefficient and other q-space measurements [P. Callaghan, "Principles of Nuclear Magnetic Resonance Microscopy", Clarendon Press, 1991]; flow velocity measurements [A. Caprihan and E. Fukushima, "Flow Measurements by NMR", Physics Reports, 198, 195-235 (1990)]; and chemical shift spectroscopy when the B.sub.0 field is sufficiently uniform [H. J. Vinegar "Method of Determining Preselected Properties of a Crude Oil", U.S. Pat. No. 5,306,640 (1994)].

Detail Description Paragraph (30):
[0053] Many wells are drilled with muds in which oil is the continuous phase. These muds are comprised of hydrocarbons ("base oil"), typically hexadecanes, plus salt water, solids, and chemical additives. Usually only the base oil, together with oil-soluble additives, enter the formation and mix with formation oils. Water and solids remain in the borehole, or form a filter cake on the borehole wall. The oil entering the formation is called "oil base mud filtrate".

Detail Description Paragraph (34):
[0057] As draw down continues, the time dependence of viscosity of the oil phase in the flow stream, .eta.(t), will vary as

Detail Description Paragraph (49):
[0070] Spectroscopy: In ordinary laboratory practice, NMR spectroscopy can be used to distinguish families of hydrocarbons from each other. For example, protons in aromatic (ring) compounds such as benzene and naphthalene, have slightly different resonant frequency than protons in alkanes [H. J. Vinegar "Method of Determining Preselected Properties of a Crude Oil", U.S. Pat. No. 5,306,640 (1994)]. OBM filtrates can be distinguished from formation oils when they have distinctive molecular conformations. Monitoring the spectrum during pumpout provides fluid-selective information. For example, T.sub.1 changes in the oil phase can be monitored independent of the signal from water. Incomplete polarization and hydrogen index effects reduce the amplitudes of individual spectral lines. The effects are the same as those affecting the amplitude measurement. Unlike the other techniques discussed, spectroscopy requires very good uniformity of the static magnetic field of the NMR apparatus: typically 1 part per million or better over the sample volume.

Detail Description Paragraph (53):
[0074] Paramagnetic ion can also be introduced in the flow line. 2.times.10.sup.18 ions/cm.sup.3 of Fe.sup.3+ will reduce water T.sub.1 to 30 msec [Andrew, Nuclear Magnetic Resonance (1955)]. Tis is equivalent to 54 grams FeCl.sub.3 per 100 liters of water. For flow line doping to work, the water must be the continuous phase, and come into contact with the source of ions.

Detail Description Paragraph (57):
[0078] Oil and water can be distinguished by many of the same techniques outlined above. Proton relaxation time differences may be based on viscosity, diffusion coefficient, paramagnetic relaxation agents, or NMR-visible trace elements. The water phase will have a very narrow relaxation time distribution in contrast to crude oil, which often has a broad distribution. Salt water has a large sodium and/or potassium NMR signal which will be absent in the oil phase. Sodium detection, in particular, offers a good way of monitoring water contamination of oil samples, even in the presence of gas. Chemical shift spectroscopy can separate oil and water resonances.

Detail Description Paragraph (62):
[0082] Nuclear magnetic resonance (NMR) is a powerful fluid characterization technique. The volumes of individual components of fluid mixtures, and some physical properties of each component, can be measured. The method is inherently noninvasive and noncontacting. Since NMR measurements are volumetric averages, they are insensitive to flow regime, bubble size, and identity of the continuous phase.

Detail Description Paragraph (90):
[0106] Chemical Shift Analysis: Proton NMR chemical shift can also be used to distinguish fluids [H. J. Vinegar, U.S. Pat. No. 5,306,640 (1994)]. Gas, light oil, and water have distinct chemical shifts [Dyer, Applications of Absorption Spectroscopy of Organic Compounds (1965) pg. 84-85]:

Detail Description Paragraph (91):
[0107] The chemical shift of methane depends on pressure [Trappeniers and Oldenziel, Physica 82A, 581 (1976)], and whether it is in the gas phase or in solution [Rummens and Mourits, Canadian Journal of Chemistry 55, 3021 (1977)].

Detail Description Paragraph (92):
[0108] Fluids are distinguished when the B.sub.0 measurement field is homogeneous to better than 1 part per million. The areas under the spectral lines are proportional to fluid volumes as described by Eqn (6). Chemical shift spectroscopy is particularly useful when oil and water have similar relaxation times.

Detail Description Paragraph (98):
[0114] Oil viscosity can be determined if the oil signal is resolved from other

fluid signals by either relaxation analysis (see above) or chemical shift analysis (see above). Also, oil viscosity can be related to the oil's diffusion coefficient, which may be measured using techniques described previously.

Detail Description Paragraph (101):
[0117] When chemical shift analysis is used, the longitudinal relaxation time, T.sub.1, of each spectral line can be determined by standard methods [H. J. Vinegar U.S. Pat. No. 5,306,640 (1994)]. Then viscosity can be found from Eqns (11a) and (11b) using the fact that T.sub.1=T.sub.2 for crude oils in the absence of magnetic field gradients.

Detail Description Paragraph (114):
[0127] Spectroscopy: The NMR chemical shift depends on the molecular environment of a spin. Thus chemical conformation can be determined; this is one of the oldest and most widespread uses of nuclear magnetic resonance. Crude oils are complex mixtures of hydrocarbons, and NMR spectroscopy is used to identify characteristic bands. For example, aliphatic protons appear in one frequency band, while aromatic protons appear at another; both are distinguishable from water [H. J. Vinegar, U.S. Pat. No. 5,306,640 (1994)]. Chemical shift spectroscopy can performed using either .sup.1H or .sup.13C [Petrakis and Edelheit, Applied Spectroscopy Reviews 15, 195 (1979); Botto, "Fossil Fuels", Encyclopedia of Nuclear Magnetic Resonance (1996)].

Detail Description Paragraph (116):
[0129] Water Phase Salinity

Detail Description Paragraph (118):
[0131] It is possible to estimate R.sub.W by measuring the concentration of current-carrying ions. Measuring individual concentrations of dissolved ions in the water phase is also very useful in interpreting flow line nuclear measurements of density and P.sub.e, the photoelectric absorption factor. The common ions in reservoir waters are ["Petroleum Engineering Handbook", H. B. Bradley, ed., Society of Petroleum Engineers, 1992, Chapter 24]:

Detail Description Paragraph (128):
[0139] By changing the operating frequency of the NMR apparatus, the quantities of various isotopes can be determined. NMR properties of commonly occurring elements in oilfield fluids may be found in Table 3 below. The best isotopes for NMR measurements are .sup.1H, .sup.23Na and .sup.35Cl. The NMR amplitude of the sodium or chlorine resonance in an oil/water mixture will give the volume of the water phase multiplied by the concentration of the ion.

Detail Description Table CWU (1):
1 TMS CH.sub.4 H.sub.3C--C --CH.sub.2-- H.sub.2O Shift (ppm) 10 9.77 9.1 8.7 4.7

CLAIMS:

3. The method of claim 1, wherein the indication of contamination comprises at least one of the following: viscosity, relaxation time, composition, trace element content, diffusion coefficient, proton density, signal amplitude, molecular conformation, and chemical shift.

8. The method of claim 1, wherein analyzing the fluid in the flow channel comprises determining at least one of the following: fluid volume, diffusion coefficient, relaxation time, proton chemical shift, hydrogen/carbon ratio, viscosity, stock tank API gravity, and fluid composition.

17. A method of analyzing water phase fluid in a downhole environment comprising: a) introducing a fluid sampling tool into a well bore that traverses an earth formation; b) using the fluid sampling tool to extract fluid from the earth formation into a flow channel within the tool; c) applying a static magnetic field to the fluid in the flow channel; d) applying an oscillating magnetic field to the fluid in the flow channel; e) detecting magnetic resonance signals indicative of nuclei of at least one of the following from the fluid: sodium-23, chlorine-35, chlorine-37, and potassium-39; and f) analyzing the detected magnetic resonance signals to determine information about the water phase fluid.

20. The method of claim 19, further comprising analyzing the detected magnetic resonance signals to determine water phase resistivity.

24. The method of claim 22, wherein determining a relaxation time comprises performing a chemical shift analysis on the detected magnetic resonance signals.

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End of Result Set

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L5: Entry 3 of 3 File: USPT Feb 12, 2002

DOCUMENT-IDENTIFIER: US 6346813 B1
TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface formations

US Patent No. (1):
6346813

Brief Summary Text (21):
Magnetic resonance, e.g., nuclear magnetic resonance (NMR) and electronic spin resonance (ESR) can be used to monitor contamination and analyze fluid samples in fluid sampling tools as fluid draw-down proceeds. Measurements are performed in the flow line itself. The methods are inherently noninvasive and noncontacting. Since magnetic resonance measurements are volumetric averages, they are insensitive to flow regime, bubble size, and identity of the continous phase. Nuclear magnetic resonance of hydrogen nuclei (protons) is preferred because of the ubiquity and good NMR characteristics of this nuclear species. However, magnetic resonance of other nuclear and electronic species is useful and so included within the scope of the present invention. In general, the methods of analyzing a fluid according to the invention include introducing a fluid sampling tool into a well bore that traverses an earth formation. The fluid sampling tool extracts the fluid from the earth formation into a flow channel within the tool. While the fluid is in the flow channel, a static magnetic field is applied, and an oscillating magnetic field applied. Magnetic resonance signals are detected from the fluid and analyzed to extract information about the fluid.

Brief Summary Text (24):
Magnetic resonance, e.g., nuclear magnetic resonance (NMR) is a powerful fluid characterization technique. The volumes of individual components of fluid mixtures, and some physical properties of each component, can be measured. The method is inherently noninvasive and noncontacting. Since NMR measurements are volumetric averages, they are insensitive to flow regime, bubble size, and identity of the continuous phase. The method comprises the steps of:

Detailed Description Text (9):
An array of permanent magnets 25 is placed outside the thick-wall metal tube. These create a constant magnetic field, conventionally called B.sub.o, substantially perpendicular to the B.sub.1 field generated by the antenna. To make chemical shift measurements (see below) B.sub.o is preferably substantially uniform in the volume occupied by fluid. However, to measure relaxation time, diffusion coefficient, or spin density of hydrogen or other elements, B.sub.o need not be particularly uniform. One suitable arrangement of permanent magnets is described by Halbach [K. Halbach, Nuc. Inst. Methods 169, 1-10 (1980); K. Halbach, Nuc. Inst. Methods 187, 109-117 (1981)].

Detailed Description Text (17):
All standard NMR measurements cain be made using the apparatus described. These include measurement s of spin density (proportional to NMR signal amplitude), longitudinal and transverse relaxation times T.sub.1 and T.sub.2 and, more generally, their distributions [R. L. Kleinberg, "Well Logging", Encyclopedia of Nuclear Magnetic Resonance, volume 8 pg 4960-4969, John Wiley & Sons, 1996]; diffusion coefficient and other q-space measurements [P. Callaghan, "Principles of

Nuclear Magnetic Resonance Microscopy", Clarend on Press, 1991]; flow velocity measurements [A. Capriban and E. Fukushima, "Flow Measurements by NMR", Physics Reports, 198, 195-235 (1990)]; and chemical shift spectroscopy when the B.sub.o field is sufficiently uniform [H. J. Vinegar "Method of Determining Preselected Properties of a Crude Oil", U.S. Pat. No. 5,306,640 (1994)].

Detailed Description Text (28):
Many wells are drilled with muds in which oil is the continuous phase. These muds are comprised of hydrocarbons ("base oil"), typically hexadecanes, plus salt water, solids, and chemical additives. Usually only the base oil, together with oil-soluble additives, enter the formnation and mix with formation oils. Water and solids remain in the borehole, or form a filter cake on the borehole wall. The oil entering the formation is called "oil base mud filtrate".

Detailed Description Text (32):
As draw down continues, the time dependence of viscosity of the oil phase in the flow stream, .eta.(t), will vary as

Detailed Description Text (45):
Spectroscopy: In ordinary laboratory practice, NMR spectroscopy can be used to distinguish families of hydrocarbons from each other. For example, protons in aromatic (ring) compounds such as benzene and naphthalene, have slightly different resonant frequency than protons in alkanes [H. J. Vinegar "Method of Determining Preselected Properties of a Crude Oil", U.S. Pat. No. 5,306,640 (1994)]. OBM filtrates can be distinguished from formation oils when they have distinctive molecular conformations. Monitoring the spectrum during pumpout provides fluid-selective information. For example, T.sub.1 changes in the oil phase can be monitored independent of the signal from water. Incomplete polarization and hydrogen index effects reduce the amplitudes of individual spectral lines. The effects are the same as those affecting the amplitude measurement. Unlike the other techniques discussed, spectroscopy requires very good uniformity of the static magnetic field of the NMR apparatus: typically 1 part per million or better over the sample volume.

Detailed Description Text (49):
Paramagnetic ion can also be introduced in the flow line. 2.times.10.sup.18 ions cm.sup.3 of Fe.sup.3+ will reduce water T.sub.1 to 30 msec [Andrew, Nuclear Magnetic Resonance (1955)]. This is equivalent to 54 grams FeCl.sub.3 per 100 liters of water. For flow line doping to work, the water must be the continuous phase, and come into contact with the source of ions.

Detailed Description Text (53):
Oil and water can be distinguished by many of the same techniques outlined above. Proton relaxation time differences may be based on viscosity, diffusion coefficient, paramagnetic relaxation agents, or NMR-visible trace elements. The water phase will have a very narrow relaxation time distribution in contrast to crude oil, which often has a broad distribution. Salt water has a large sodium and/or potassium NMR signal which will be absent in the oil phase. Chemical shift spectroscopy can separate oil and water resonances.

Detailed Description Text (69):
Nuclear magnetic resonance (NMR) is a powerful fluid characterization technique. The volumes of individual components of fluid mixtures, and some physical properties of each component, can be measured. The method is inherently noninvasive and noncontacting. Since NMR measurements are volumetric averages, they are insensitive to flow regime, bubble size, and identity of the continuous phase.

Detailed Description Text (90):
Chemical Shift Analysis: Proton NMR chemical shift can also be used to distinguish fluids [H. J. Vinegar, U.S. Pat. No. 5,306,640 (1994)]. Gas, light oil, and water have distinct chemical shifts [Dyer, Applications of Absorption Spectroscopy of Organic Compounds (1965) pg. 84-85.]

Detailed Description Text (91):
The chemical shift of methane depends on pressure [Trappeniers and Oldenziel,

Physica 82A, 581 (1976)], and whether it is in the gas phase or in solution [Rummens and Moutits, Canadian Journal of Chemistry 55, 3021 (1977)].

Detailed Description Text (92):
Fluids are distinguished when the B.sub.o measurement field is homogeneous to better than 1 part per million. The areas under the spectral lines are proportional to fluid volumes as described by Eqn (6). Chemical shift spectroscopy is particularly useful when oil and water have similar relaxation times.

Detailed Description Text (96):
Oil viscosity can be determined if the oil signal is resolved from other fluid signals by either relaxation analysis (see above) or chemical shift analysis (see above).

Detailed Description Text (99):
When chemical shift analysis is used, the longitudinal relaxation time, T.sub.1, of each spectral line can be determined by standard methods [H. J. Vinegar U.S. Pat. No. 5,306,640 (1994)]. Then viscosity can be found from Eqn (5) using the fact that T.sub.1 =T.sub.2 for crude oils in the absence of magnetic field gradients.

Detailed Description Text (102):
Spectroscopy: The NMR chemical shift depends on the molecular environment of a spin. Thus chemical conformation can be determined; this is one of the oldest and most widespread uses of nuclear magnetic resonance. Crude oils are complex mixtures of hydrocarbons, and NMR spectroscopy is used to identify characteristic bands. For example, aliphatic protons appear in one frequency band, while aromatic protons appear at another; both are distinguishable from water [H. J. Vinegar, U.S. Pat. No. 5,306,640 (1994)]. Chemical shift spectroscopy can performed using either .sup.1 H or .sup.13 C [Petrakis and Edelheit, Applied Spectroscopy Reviews 15, 195 (1979); Botto, "Fossil Fuels", Encyclopedia of Nuclear Magnetic Resonance (1996)].

Detailed Description Text (104):
Water Phase Salinity

Detailed Description Paragraph Table (1):
TMS CH.sub.4 H.sub.3 C--C --CH.sub.2 -- H.sub.2 O Shift (ppm) 10 9.77 9.1 8.7 4.7

Other Reference Publication (21):
Rummens, Frans H.A. and Mourits, Frank M., Intermolecular Interactions in Nuclear Magnetic Resonance.XI. The .sup.13 C and Proton Medium Shifts of CH.sub.4 in the Gas Phase and in Solution, Canadian Journal of Chemistry, 55 (1977) p. 3021.

CLAIMS:

5. The method of claim 4, wherein analyzing the detected magnetic resonance signals comprises performing a chemical shift analysis.

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Search Results - Record(s) 1 through 4 of 4 returned.

☑ 1. Document ID: US 6470274 B1

L8: Entry 1 of 4 File: USPT Oct 22, 2002

US-PAT-NO: 6470274
DOCUMENT-IDENTIFIER: US 6470274 B1

TITLE: Water saturation and sand fraction determination from borehole resistivity imaging tool, transverse induction logging and a tensorial dual water saturation model

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mollison; Richard A.	Tomball	TX		
Fanini; Otto N.	Houston	TX		
Kriegshauser; Berthold	Houston	TX		
Pavlovic; Milomir	Houston	TX		

US-CL-CURRENT: 702/7; 702/12

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc | Image

☐ 2. Document ID: US 5273993 A

L8: Entry 2 of 4 File: USPT Dec 28, 1993

US-PAT-NO: 5273993
DOCUMENT-IDENTIFIER: US 5273993 A

TITLE: Compounds having one or more aminosulfonyloxy radicals useful as pharmaceuticals

DATE-ISSUED: December 28, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lo; Young S.	Hockessin	DE		
Nolan; Joseph C.	Midlothian	VA		
Welstead, Jr.; William J.	Richmond	VA		
Walsh; David A.	Augusta	GA		
Shamblee; Dwight A.	Richmond	VA		
Uwaydah; Ibrahim M.	Richmond	VA		

US-CL-CURRENT: 514/400; 514/309, 514/311, 514/312, 514/347, 514/348, 514/362, 514/369, 514/398, 514/415, 514/418, 514/445, 514/457, 514/473, 548/335.5, 558/48

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc | Image

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☐ 3. Document ID: US 5194446 A

L8: Entry 3 of 4 File: USPT Mar 16, 1993

US-PAT-NO: 5194446
DOCUMENT-IDENTIFIER: US 5194446 A

TITLE: Compounds having one or more aminosulfaonyloxy radicals useful as pharmaceuticals

DATE-ISSUED: March 16, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lo; Young S.	Hockessin	DE		
Nolan; Joseph C.	Midlothian	VA		
Welstead, Jr.; William J.	Richmond	VA		
Walsh; David A.	Augusta	GA		
Shamblee; Dwight A.	Richmond	VA		
Uwaydah; Ibrahim M.	Richmond	VA		

US-CL-CURRENT: 514/494; 514/517, 514/825, 536/17.9, 546/141, 546/142, 546/153, 546/155, 548/135, 548/142, 548/166, 548/182, 549/283, 549/51, 549/52, 549/57, 556/119, 558/48, 558/49, 558/50

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 5192785 A

L8: Entry 4 of 4 File: USPT Mar 9, 1993

US-PAT-NO: 5192785
DOCUMENT-IDENTIFIER: US 5192785 A

TITLE: Sulfamates as antiglaucoma agents

DATE-ISSUED: March 9, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lo; Young S.	Hockessin	DE		
Nolan; Joseph C.	Midlothian	VA		
Shamblee; Dwight A.	Richmond	VA		

US-CL-CURRENT: 514/399; 514/517, 558/48

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Term	Documents
BRINE	58456
BRINES	4490
SALINE	122536
SALINES	260
SALINITY	5734
SALINITIES	562
SALINITYS	0
SALT	803406
SALTS	557700
(7 AND (BRINE WITH (SALINITY OR SALINE OR SALT))).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	4
(L7 AND ((BRINE) WITH (SALINE OR SALINITY OR SALT))).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	4

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Search Results - Record(s) 1 through 6 of 6 returned.

☐ 1. Document ID: US 20020055046 A1

L13: Entry 1 of 6 File: PGPB May 9, 2002

PGPUB-DOCUMENT-NUMBER: 20020055046
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020055046 A1

TITLE: Electrolyte composition and electrochemical battery using the same

PUBLICATION-DATE: May 9, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ono, Michio	Kanagawa		JP	
Wariishi, Koji	Kanagawa		JP	
Yasuda, Takayasu	Kanagawa		JP	
Qian, Chang-Yi	Kanagawa		JP	

US-CL-CURRENT: 429/324; 429/199, 429/306

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6605454 B2

L13: Entry 2 of 6 File: USPT Aug 12, 2003

US-PAT-NO: 6605454
DOCUMENT-IDENTIFIER: US 6605454 B2

TITLE: Microfluidic devices with monolithic microwave integrated circuits

DATE-ISSUED: August 12, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Barenburg; Barbara Foley	Gilbert	AZ		
Burdon; Jeremy	Scottsdale	AZ		
Chan; Yuk-Tong	Scottsdale	AZ		
Dai; Xunhu	Gilbert	AZ		
Gallagher; Sean	Scottsdale	AZ		
Grodzinski; Piotr	Chandler	AZ		
Marrero; Robert	Chandler	AZ		
Nair; Vijay	Mesa	AZ		
Rhine; David	Phoenix	AZ		
Smekal; Thomas	Phoenix	AZ		

US-CL-CURRENT: 435/173.7; 219/690, 219/691, 219/692, 219/693, 422/22

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 3. Document ID: US 6168655 B1

L13: Entry 3 of 6 File: USPT Jan 2, 2001

US-PAT-NO: 6168655
DOCUMENT-IDENTIFIER: US 6168655 B1

TITLE: Colorant stabilizers

DATE-ISSUED: January 2, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nohr; Ronald Sinclair	Alpharetta	GA		
MacDonald; John Gavin	Decatur	GA		

US-CL-CURRENT: 106/31.58; 106/31.86, 106/499

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 6099628 A

L13: Entry 4 of 6 File: USPT Aug 8, 2000

US-PAT-NO: 6099628
DOCUMENT-IDENTIFIER: US 6099628 A

TITLE: Colorant stabilizers

DATE-ISSUED: August 8, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nohr; Ronald Sinclair	Alpharetta	GA		
MacDonald; John Gavin	Decatur	GA		

US-CL-CURRENT: 106/31.49; 106/31.78

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 5. Document ID: US 5885337 A

L13: Entry 5 of 6 File: USPT Mar 23, 1999

US-PAT-NO: 5885337
DOCUMENT-IDENTIFIER: US 5885337 A

TITLE: Colorant stabilizers

DATE-ISSUED: March 23, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nohr; Ronald Sinclair	Alpharetta	GA	30202	
MacDonald; John Gavin	Decatur	GA	30033	

US-CL-CURRENT: 106/31.27; 106/31.36, 106/31.43, 106/31.6, 106/31.68, 106/31.75, 106/499

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 6. Document ID: US 5782963 A

L13: Entry 6 of 6 File: USPT Jul 21, 1998

US-PAT-NO: 5782963
DOCUMENT-IDENTIFIER: US 5782963 A

TITLE: Colorant stabilizers

DATE-ISSUED: July 21, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nohr; Ronald Sinclair	Alpharetta	GA		
MacDonald; John Gavin	Decatur	GA		

US-CL-CURRENT: 106/31.27; 106/31.36, 106/31.43, 106/31.49, 106/31.6, 106/31.68, 106/31.75, 106/31.78

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Term	Documents
"SPIN ECHO"	0
SPINECHO	23
SPINECHOES	0
SPINECHOS	0
SPINECHOE	0
CPMG	340
CPMGS	9
CARR	20264
CARRS	78
PURCELL	3471
PURCELLS	1
(L12 AND (SPIN-ECHO$3 OR "SPIN ECHO" OR SPINECHO OR CPMG OR CARR OR PURCELL OR MEIBOOM OR GIL)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	6

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Search Results - Record(s) 1 through 1 of 1 returned.

☐ 1. Document ID: US 4728892 A

L18: Entry 1 of 1 File: USPT Mar 1, 1988

US-PAT-NO: 4728892
DOCUMENT-IDENTIFIER: US 4728892 A

TITLE: NMR imaging of materials

DATE-ISSUED: March 1, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vinegar; Harold J.	Houston	TX		
Rothwell; William P.	Katy	TX		

US-CL-CURRENT: 324/309; 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

Generate Collection | Print

Term	Documents
"SPIN ECHO"	0
SPINECHO	23
SPINECHOES	0
SPINECHOS	0
SPINECHOE	0
CPMG	340
CPMGS	9
CARR	20264
CARRS	78
PURCELL	3471
PURCELLS	1
(L17 AND (SPIN-ECHO$3 OR "SPIN ECHO" OR SPINECHO OR CPMG OR CARR OR PURCELL OR MEIBOOM OR GIL)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	1

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Search Results - Record(s) 1 through 7 of 7 returned.

☐ 1. Document ID: US 20030153086 A1

L23: Entry 1 of 7 File: PGPB Aug 14, 2003

PGPUB-DOCUMENT-NUMBER: 20030153086
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030153086 A1

TITLE: Method for producing purified hematinic iron-saccharidic complex and product produced

PUBLICATION-DATE: August 14, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Beck, Robert A.	Framingham	MA	US	
Mateer, Robert A.	North Uxbridge	MA	US	

US-CL-CURRENT: 436/74; 436/84, 436/94

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 2. Document ID: US 20030059837 A1

L23: Entry 2 of 7 File: PGPB Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030059837
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030059837 A1

TITLE: Method and system for planning, performing, and assessing high-throughput screening of multicomponent chemical compositions and solid forms of compounds

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Levinson, Douglas A.	Sherborn	MA	US	
McNulty, Christopher	Minneapolis	MN	US	
Moore, Christopher B.	Cambridge	MA	US	

US-CL-CURRENT: 435/7.1; 702/19

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 3. Document ID: US 20020177167 A1

L23: Entry 3 of 7 File: PGPB Nov 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020177167
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020177167 A1

TITLE: Method and system for planning, performing, and assessing high-throughput screening of multicomponent chemical compositions and solid forms of compounds

PUBLICATION-DATE: November 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Levinson, Douglas A.	Sherborn	MA	US	
Chin, Donovan	Lexington	MA	US	

US-CL-CURRENT: 435/7.1; 436/518, 702/19

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 4. Document ID: US 20020076821 A1

L23: Entry 4 of 7 File: PGPB Jun 20, 2002

PGPUB-DOCUMENT-NUMBER: 20020076821
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020076821 A1

TITLE: Method for producing purified hematinic iron-saccharidic complex and product produced

PUBLICATION-DATE: June 20, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Beck, Robert A.	Framingham	MA	US	
Mateer, Robert A.	North Uxbridge	MA	US	

US-CL-CURRENT: 436/74; 436/84, 436/94

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 5. Document ID: US 6537820 B2

L23: Entry 5 of 7 File: USPT Mar 25, 2003

US-PAT-NO: 6537820
DOCUMENT-IDENTIFIER: US 6537820 B2

TITLE: Method for producing purified hematinic iron-saccharidic complex and product

produced

DATE-ISSUED: March 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beck; Robert A.	Framingham	MA		
Mateer; Robert A.	North Uxbridge	MA		

US-CL-CURRENT: 436/84; 210/198.2, 210/656, 422/70, 436/161, 436/164, 436/175, 436/177, 436/178, 436/73, 436/8, 436/94

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 6. Document ID: US 6468806 B1

L23: Entry 6 of 7 File: USPT Oct 22, 2002

US-PAT-NO: 6468806
DOCUMENT-IDENTIFIER: US 6468806 B1

TITLE: Potential masking systems and methods for combinatorial library synthesis

DATE-ISSUED: October 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
McFarland; Eric	San Jose	CA		
Danielson; Earl	Palo Alto	CA		
Devenney; Martin	Mountain View	CA		
Warren; Christopher J.	Mountain View	CA		

US-CL-CURRENT: 436/518; 205/118, 205/123, 205/136, 205/81, 422/68.1, 422/82.01, 435/DIG.1, 435/DIG.43, 435/DIG.44, 435/DIG.45

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 7. Document ID: US 5514337 A

L23: Entry 7 of 7 File: USPT May 7, 1996

US-PAT-NO: 5514337
DOCUMENT-IDENTIFIER: US 5514337 A

TITLE: Chemical sensor using eddy current or resonant electromagnetic circuit detection

DATE-ISSUED: May 7, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Groger; Howard P.	Gainesville	FL		
Churchill; Russell J.	Radford	VA		
Kelsch; James	Gainesville	FL		

US-CL-CURRENT: 422/82.08; 324/207.15, 324/236, 324/607, 324/654, 324/658, 422/108

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Term	Documents
POLARI$9	0
POLARI	91
POLARIAABLE	1
POLARIABILITY	1
POLARIAETERS	1
POLARIAING	2
POLARIAN	1
POLARIATION	31
POLARIATIONS	2
POLARIATY	2
POLARIAZATION	5
(L22 AND (POLARI$9)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	7

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Search Results - Record(s) 1 through 25 of 25 returned.

☐ 1. Document ID: US 20030156986 A1

L26: Entry 1 of 25 File: PGPB Aug 21, 2003

PGPUB-DOCUMENT-NUMBER: 20030156986
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030156986 A1

TITLE: Tuning compensation for automated NMR analysis

PUBLICATION-DATE: August 21, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Cosman, Jason W.	Sunnyvale	CA	US	

US-CL-CURRENT: 422/82.05; 324/321

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 2. Document ID: US 20030034777 A1

L26: Entry 2 of 25 File: PGPB Feb 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030034777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030034777 A1

TITLE: In-situ heavy -oil reservoir evaluation with artificial temperature elevation

PUBLICATION-DATE: February 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Songhua	Katy	TX	US	
Georgi, Daniel T.	Houston	TX	US	

US-CL-CURRENT: 324/303; 702/6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 3. Document ID: US 20030006768 A1

L26: Entry 3 of 25 File: PGPB Jan 9, 2003

PGPUB-DOCUMENT-NUMBER: 20030006768
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030006768 A1

TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface earth formations

PUBLICATION-DATE: January 9, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kleinberg, Robert L.	Ridgefield	CT	US	
Madio, David P.	Danbury	CT	US	
Mullins, Oliver C.	Ridgefield	CT	US	

US-CL-CURRENT: 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 20020135373 A1

L26: Entry 4 of 25 File: PGPB Sep 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020135373
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020135373 A1

TITLE: Superconducting control elements for RF antennas

PUBLICATION-DATE: September 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
James, Timothy W.	Goleta	CA	US	
Bourne, Lincoln C.	Santa Barbara	CA	US	

US-CL-CURRENT: 324/322; 324/318

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 5. Document ID: US 6538445 B2

L26: Entry 5 of 25 File: USPT Mar 25, 2003

US-PAT-NO: 6538445
DOCUMENT-IDENTIFIER: US 6538445 B2

TITLE: Superconducting control elements for RF antennas

DATE-ISSUED: March 25, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
James; Timothy W.	Goleta	CA		
Bourne; Lincoln C.	Santa Barbara	CA		

US-CL-CURRENT: 324/322; 324/318

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 6. Document ID: US 6466814 B1

L26: Entry 6 of 25 File: USPT Oct 15, 2002

US-PAT-NO: 6466814
DOCUMENT-IDENTIFIER: US 6466814 B1

TITLE: Method of magnetic resonance investigation

DATE-ISSUED: October 15, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ardenkjaer-Larsen; Jan Henrik	Malmo			SE
Axelsson; Oskar	Malmo			SE
Golman; Klaes	Malmo			SE
Wistrand; Lars-Goran	Malmo			SE
Hansson; Georg	Malmo			SE
Leunbach; Ib	Dragor			DK
Petersson; Stefan	Malmo			SE

US-CL-CURRENT: 600/420; 324/307, 324/309, 424/9.3, 600/419

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 7. Document ID: US 6346813 B1

L26: Entry 7 of 25 File: USPT Feb 12, 2002

US-PAT-NO: 6346813
DOCUMENT-IDENTIFIER: US 6346813 B1

TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface formations

DATE-ISSUED: February 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kleinberg; Robert L.	Ridgefield	CT		

US-CL-CURRENT: 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 8. Document ID: US 6335622 B1

L26: Entry 8 of 25 File: USPT Jan 1, 2002

US-PAT-NO: 6335622
DOCUMENT-IDENTIFIER: US 6335622 B1

TITLE: Superconducting control elements for RF antennas

DATE-ISSUED: January 1, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
James; Timothy W.	Goleta	CA		
Bourne; Lincoln C.	Santa Barbara	CA		

US-CL-CURRENT: 324/318; 324/322

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 9. Document ID: US 6311086 B1

L26: Entry 9 of 25 File: USPT Oct 30, 2001

US-PAT-NO: 6311086
DOCUMENT-IDENTIFIER: US 6311086 B1

TITLE: Overhauser magnetic resonance imaging (ORMI) method comprising ex vivo polarization of a magnetic resonance (MR) imaging agent

DATE-ISSUED: October 30, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ardenkjaer-Larsen; Jan Henrik	Oslo			NO
Golman; Klaes	Oslo			NO
Hansson; Georg	Oslo			NO
Leunbach; Ib	Oslo			NO
Petersson; Stefan	Oslo			NO
Wistrand; Lars-Goran	Oslo			NO
Axelsson; Oskar	Oslo			NO

US-CL-CURRENT: 600/420; 324/307, 324/309

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 10. Document ID: US 6278893 B1

L26: Entry 10 of 25 File: USPT Aug 21, 2001

US-PAT-NO: 6278893
DOCUMENT-IDENTIFIER: US 6278893 B1

TITLE: Method of magnetic resonance imaging of a sample with ex vivo polarization of an MR imaging agent

DATE-ISSUED: August 21, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ardenkj.ae butted.r-Larson; Jan Henrik	Malmo			SE
Axelsson; Oskar	Malmo			SE
Golman; Klaes	Malmo			SE
Hansson; Georg	Malmo			SE
Leunbach; Ib	Malmo			SE
Petersson; Stefan	Malmo			SE
Wistrand; Lars-Goran	Malmo			SE

US-CL-CURRENT: 600/420; 324/307, 324/309, 424/9.3

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 11. Document ID: US 6008644 A

L26: Entry 11 of 25 File: USPT Dec 28, 1999

US-PAT-NO: 6008644
DOCUMENT-IDENTIFIER: US 6008644 A

TITLE: Nuclear Polarization Enhanced Nuclear Magnetic Resonance Imaaging

DATE-ISSUED: December 28, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Leunbach; Ib	Dragor			DK
Young; Ian	London			GB
Ehnholm; Gosta	Helsinki			FI
Hansson; Georg	Vellinge			SE
Petersson; Stefan	Helsingborg			SE
Wistrand; Lars-Goran	Lund			SE
Golman; Klaes	Rungsted Kyst			DK

US-CL-CURRENT: 324/300; 324/307, 600/412

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 12. Document ID: US 5928145 A

L26: Entry 12 of 25 File: USPT Jul 27, 1999

US-PAT-NO: 5928145
DOCUMENT-IDENTIFIER: US 5928145 A

TITLE: Method of magnetic resonance imaging and spectroscopic analysis and associated apparatus employing a loopless antenna

DATE-ISSUED: July 27, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ocali; Ogan	Baltimore	MD		
Atalar; Ergin	Columbia	MD		

US-CL-CURRENT: 600/410; 324/307, 324/309, 324/318, 600/411, 600/423

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 13. Document ID: US 5699801 A

L26: Entry 13 of 25 File: USPT Dec 23, 1997

US-PAT-NO: 5699801
DOCUMENT-IDENTIFIER: US 5699801 A

TITLE: Method of internal magnetic resonance imaging and spectroscopic analysis and associated apparatus

DATE-ISSUED: December 23, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Atalar; Ergin	Columbia	MD		
Bottomley; Paul A.	Columbia	MD		
Zerhouni; Elias A.	Baltimore	MD		

US-CL-CURRENT: 600/410; 324/318, 324/322, 600/422

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 14. Document ID: US 5654636 A

L26: Entry 14 of 25 File: USPT Aug 5, 1997

US-PAT-NO: 5654636
DOCUMENT-IDENTIFIER: US 5654636 A

TITLE: Method and apparatus for NMR spectroscopy of nanoliter volume samples

DATE-ISSUED: August 5, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sweedler; Jonathan V.	Urbana	IL		
Peck; Timothy L.	Champaign	IL		
Webb; Andrew G.	Urbana	IL		
Magin; Richard L.	Urbana	IL		
Wu; Nian	Columbia	MD		

US-CL-CURRENT: 324/321; 324/307

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 15. Document ID: US 5552709 A

L26: Entry 15 of 25 File: USPT Sep 3, 1996

US-PAT-NO: 5552709
DOCUMENT-IDENTIFIER: US 5552709 A

TITLE: NMR sample cell

DATE-ISSUED: September 3, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Anderson; Weston A.	Palo Alto	CA		

US-CL-CURRENT: 324/321; 324/318

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 16. Document ID: US 5459077 A

L26: Entry 16 of 25 File: USPT Oct 17, 1995

US-PAT-NO: 5459077
DOCUMENT-IDENTIFIER: US 5459077 A

TITLE: Methods for modelling tertiary structures of biologically active ligands and for modelling agonists and antagonists thereto

DATE-ISSUED: October 17, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Moore; Graham J.	Calgary			CA
Matsoukas; John M.	Patras			GR

US-CL-CURRENT: 436/173; 324/307, 324/312, 436/172, 436/86, 530/315, 530/316

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 17. Document ID: US 5252922 A

L26: Entry 17 of 25 File: USPT Oct 12, 1993

US-PAT-NO: 5252922
DOCUMENT-IDENTIFIER: US 5252922 A

TITLE: Radiofrequency focusing of magnetic resonance images

DATE-ISSUED: October 12, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/309

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 18. Document ID: US 5221900 A

L26: Entry 18 of 25 File: USPT Jun 22, 1993

US-PAT-NO: 5221900
DOCUMENT-IDENTIFIER: US 5221900 A

TITLE: Magnet structure for focusing of magnetic resonance images

DATE-ISSUED: June 22, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/307; 324/309

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 19. Document ID: US 5185573 A

L26: Entry 19 of 25 File: USPT Feb 9, 1993

US-PAT-NO: 5185573
DOCUMENT-IDENTIFIER: US 5185573 A
**** See image for Certificate of Correction ****

TITLE: Method for focusing of magnetic resonance images

DATE-ISSUED: February 9, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/309; 324/307

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 20. Document ID: US 4785245 A

L26: Entry 20 of 25 File: USPT Nov 15, 1988

US-PAT-NO: 4785245
DOCUMENT-IDENTIFIER: US 4785245 A

TITLE: Rapid pulse NMR cut meter

DATE-ISSUED: November 15, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lew; Hyok S.	Arvada	CO		
Schlatter; Gerald L.	Boulder	CO		

US-CL-CURRENT: 324/308; 324/307, 324/314, 324/319, 324/321, 436/173

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 21. Document ID: US 4784146 A

L26: Entry 21 of 25 File: USPT Nov 15, 1988

US-PAT-NO: 4784146
DOCUMENT-IDENTIFIER: US 4784146 A
**** See image for Certificate of Correction ****

TITLE: Angled segment receiver coil for NMR imaging of a human head

DATE-ISSUED: November 15, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mancuso; Anthony A.	Gainesville	FL		
Fitzsimmons; Jeffrey R.	Gainesville	FL		
Thomas; Ray G.	Gainesville	FL		

US-CL-CURRENT: 600/422; 324/318, 324/322

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

22. Document ID: US 4728892 A

L26: Entry 22 of 25 File: USPT Mar 1, 1988

US-PAT-NO: 4728892
DOCUMENT-IDENTIFIER: US 4728892 A

TITLE: NMR imaging of materials

DATE-ISSUED: March 1, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vinegar; Harold J.	Houston	TX		
Rothwell; William P.	Katy	TX		

US-CL-CURRENT: 324/309; 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

23. Document ID: US 4719406 A

L26: Entry 23 of 25 File: USPT Jan 12, 1988

US-PAT-NO: 4719406
DOCUMENT-IDENTIFIER: US 4719406 A

TITLE: Phantom for performance evaluation of a nuclear magnetic resonance scanner

DATE-ISSUED: January 12, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Schaefer; Daniel J.	Waukesha	WI		
Newman; Robert W.	Milwaukee	WI		

US-CL-CURRENT: 324/318; 324/300

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

24. Document ID: US 4717880 A

L26: Entry 24 of 25 File: USPT Jan 5, 1988

US-PAT-NO: 4717880
DOCUMENT-IDENTIFIER: US 4717880 A
**** See image for Certificate of Correction ****

TITLE: ESR spectrometer having split-ring resonator

DATE-ISSUED: January 5, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ono; Mitsuhiro	Yamagata			JP
Sha; Kokusho	Yamagata			JP
Suzuki; Michiya	Yamagata			JP
Ogata; Tateaki	Yamagata			JP
Yoshida; Ekuo	Tokyo			JP

US-CL-CURRENT: 324/316; 324/318, 333/219

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 25. Document ID: US 3966973 A

L26: Entry 25 of 25 File: USPT Jun 29, 1976

US-PAT-NO: 3966973
DOCUMENT-IDENTIFIER: US 3966973 A

TITLE: Process for determining and controlling the moisture of food products

DATE-ISSUED: June 29, 1976

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Henry; William F.	Minneapolis	MN		
Templeman; Gareth J.	Chanhassen	MN		
Gorman; Roger A.	Hopkins	MN		
Pinaire; Lawrence	Clarksville	IN		

US-CL-CURRENT: 426/231; 324/307, 73/169, 73/73

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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Term	Documents
(25 AND 5).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	25
(L25 AND L5).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	25

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Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: US 20030034777 A1

L27: Entry 1 of 2 File: PGPB Feb 20, 2003

PGPUB-DOCUMENT-NUMBER: 20030034777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030034777 A1

TITLE: In-situ heavy -oil reservoir evaluation with artificial temperature elevation

PUBLICATION-DATE: February 20, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Songhua	Katy	TX	US	
Georgi, Daniel T.	Houston	TX	US	

US-CL-CURRENT: 324/303; 702/6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☑ 2. Document ID: US 4728892 A

L27: Entry 2 of 2 File: USPT Mar 1, 1988

US-PAT-NO: 4728892
DOCUMENT-IDENTIFIER: US 4728892 A

TITLE: NMR imaging of materials

DATE-ISSUED: March 1, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vinegar; Harold J.	Houston	TX		
Rothwell; William P.	Katy	TX		

US-CL-CURRENT: 324/309; 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Term	Documents
POROSITY	100413
POROSITIES	4998
POROSITYS	6
(26 AND POROSITY).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	2
(L26 AND (POROSITY)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	2

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Search Results - Record(s) 1 through 5 of 5 returned.

1. Document ID: US 20030006768 A1

L31: Entry 1 of 5 File: PGPB Jan 9, 2003

PGPUB-DOCUMENT-NUMBER: 20030006768
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030006768 A1

TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface earth formations

PUBLICATION-DATE: January 9, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kleinberg, Robert L.	Ridgefield	CT	US	
Madio, David P.	Danbury	CT	US	
Mullins, Oliver C.	Ridgefield	CT	US	

US-CL-CURRENT: 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

2. Document ID: US 6346813 B1

L31: Entry 2 of 5 File: USPT Feb 12, 2002

US-PAT-NO: 6346813
DOCUMENT-IDENTIFIER: US 6346813 B1

TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface formations

DATE-ISSUED: February 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kleinberg; Robert L.	Ridgefield	CT		

US-CL-CURRENT: 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 3. Document ID: US 5252922 A

L31: Entry 3 of 5 File: USPT Oct 12, 1993

US-PAT-NO: 5252922
DOCUMENT-IDENTIFIER: US 5252922 A

TITLE: Radiofrequency focusing of magnetic resonance images

DATE-ISSUED: October 12, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/309

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 5221900 A

L31: Entry 4 of 5 File: USPT Jun 22, 1993

US-PAT-NO: 5221900
DOCUMENT-IDENTIFIER: US 5221900 A

TITLE: Magnet structure for focusing of magnetic resonance images

DATE-ISSUED: June 22, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/307; 324/309

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 5. Document ID: US 5185573 A

L31: Entry 5 of 5 File: USPT Feb 9, 1993

US-PAT-NO: 5185573
DOCUMENT-IDENTIFIER: US 5185573 A
**** See image for Certificate of Correction ****

TITLE: Method for focusing of magnetic resonance images

DATE-ISSUED: February 9, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/309; 324/307

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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Term	Documents
POLARI$9	0
POLARI	91
POLARIAABLE	1
POLARIABILITY	1
POLARIAETERS	1
POLARIAING	2
POLARIAN	1
POLARIATION	31
POLARIATIONS	2
POLARIATY	2
POLARIAZATION	5
(L30 AND (POLARI$9)).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	5

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Search Results - Record(s) 1 through 7 of 7 returned.

☐ 1. Document ID: US 20030006768 A1

L30: Entry 1 of 7 File: PGPB Jan 9, 2003

PGPUB-DOCUMENT-NUMBER: 20030006768
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030006768 A1

TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface earth formations

PUBLICATION-DATE: January 9, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kleinberg, Robert L.	Ridgefield	CT	US	
Madio, David P.	Danbury	CT	US	
Mullins, Oliver C.	Ridgefield	CT	US	

US-CL-CURRENT: 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 2. Document ID: US 6346813 B1

L30: Entry 2 of 7 File: USPT Feb 12, 2002

US-PAT-NO: 6346813
DOCUMENT-IDENTIFIER: US 6346813 B1

TITLE: Magnetic resonance method for characterizing fluid samples withdrawn from subsurface formations

DATE-ISSUED: February 12, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kleinberg; Robert L.	Ridgefield	CT		

US-CL-CURRENT: 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 3. Document ID: US 5252922 A

L30: Entry 3 of 7 File: USPT Oct 12, 1993

US-PAT-NO: 5252922
DOCUMENT-IDENTIFIER: US 5252922 A

TITLE: Radiofrequency focusing of magnetic resonance images

DATE-ISSUED: October 12, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/309

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 4. Document ID: US 5221900 A

L30: Entry 4 of 7 File: USPT Jun 22, 1993

US-PAT-NO: 5221900
DOCUMENT-IDENTIFIER: US 5221900 A

TITLE: Magnet structure for focusing of magnetic resonance images

DATE-ISSUED: June 22, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/307; 324/309

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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☐ 5. Document ID: US 5185573 A

L30: Entry 5 of 7 File: USPT Feb 9, 1993

US-PAT-NO: 5185573
DOCUMENT-IDENTIFIER: US 5185573 A
**** See image for Certificate of Correction ****

TITLE: Method for focusing of magnetic resonance images

DATE-ISSUED: February 9, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Larson, III; John D.	Palo Alto	CA		

US-CL-CURRENT: 324/309; 324/307

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 6. Document ID: US 4785245 A

L30: Entry 6 of 7 File: USPT Nov 15, 1988

US-PAT-NO: 4785245
DOCUMENT-IDENTIFIER: US 4785245 A

TITLE: Rapid pulse NMR cut meter

DATE-ISSUED: November 15, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lew; Hyok S.	Arvada	CO		
Schlatter; Gerald L.	Boulder	CO		

US-CL-CURRENT: 324/308; 324/307, 324/314, 324/319, 324/321, 436/173

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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☐ 7. Document ID: US 4728892 A

L30: Entry 7 of 7 File: USPT Mar 1, 1988

US-PAT-NO: 4728892
DOCUMENT-IDENTIFIER: US 4728892 A

TITLE: NMR imaging of materials

DATE-ISSUED: March 1, 1988

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vinegar; Harold J.	Houston	TX		
Rothwell; William P.	Katy	TX		

US-CL-CURRENT: 324/309; 324/303

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw. Desc | Image

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Term	Documents
FORMATION	1281596
FORMATIONS	63608
EARTH	445451
EARTHS	13598
BOREHOLE	33938
BOREHOLES	12889
BORE-HOLE	1436
BORE-HOLES	615
"BORE HOLE"	0
WELLBORE	13018
WELLBORES	3167
(L29 AND (FORMATION OR EARTH OR BOREHOLE OR BORE-HOLE OR "BORE HOLE" OR WELLBORE OR WELL-BORE OR "WELL BORE")).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	7

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